

Industry/University Cooperative Research Centers Program (I/UCRC)

PROGRAM SOLICITATION

NSF 13-594

REPLACES DOCUMENT(S):

NSF 12-516



National Science Foundation

Directorate for Engineering
Industrial Innovation and Partnerships

Directorate for Computer & Information Science &
Engineering

Directorate for Geosciences

Letter of Intent Due Date(s) (*required*) (due by 5 p.m. proposer's local time):

January 06, 2014

First Monday in January, Annually Thereafter

June 27, 2014

Last Friday in June, Annually Thereafter

Planning Grant and Full Center Proposal Deadline(s) (due by 5 p.m. proposer's local time):

March 04, 2014

First Tuesday in March, Annually Thereafter

Planning Grant and Full Center Proposal

September 26, 2014

Last Friday in September, Annually Thereafter

Planning Grant and Full Center Proposal

IMPORTANT INFORMATION AND REVISION NOTES

REVISION NOTES:

Minor changes have been made to the text of the solicitation for increased clarity.

Changes have been made to the list of Cognizant Program Directors; added Shashank Priya (ENG) and Raffaella Montelli (GEO) as agency/directorate contacts.

The membership agreement template has been revised. A center may now choose from one of the three options. All options retain key cooperative research model elements, including collective decision-making, pre-publication access to results, publication review, and either shared IP rights or shared commitment to public domain use. Choice of sample membership agreement Options 2 or 3 may impact inter-center collaborations supported by membership fees (e.g., Collaborative Opportunity for Research between I/UCRCs) and require reconciliation prior to proposal.

Phase I and Phase II funds have been increased by \$5,000.

The solicitation explicitly states that the institution should request to recover indirect costs on the evaluator support.

No other changes were made from the previous release of NSF 12-516.

IMPORTANT INFORMATION FOR POTENTIAL SUBMITTERS:

All proposals that fail to address the following items will be considered non-responsive and will be returned without review.

1. Failure to submit a Letter of Intent (LOI) by 5:00 pm (proposer's time) on the deadline date. The "proposer's time" is the local time zone associated with the submitting institution as indicated on the Cover Page.
2. A proposal submitted after 5:00 pm (proposer's time as detailed above) on the deadline date.
3. A proposal missing any of the items below, or with any item *other than the following* in the "Other Supplementary Documents" section: Please see "Supplementary Documents" under Section V.A. of this solicitation for more information.

PLANNING GRANT PROPOSALS:

- A. Proposed center marketing plan
- B. Staffing plan with a responsibility matrix
- C. Membership agreement for industry partners
- D. Draft agenda
- E. Potential center member letters (6 letters minimum per institution)
- F. Letter of evidence that the proposed research thrusts do not overlap with those in existing Centers (does not apply if joining an existing Center as a research site)

FULL CENTER PROPOSALS:

- A. Membership agreement for industry partners
- B. List of participating center members and their letters of financial commitment
- C. List of collaborations with additional institutions (if applicable)
- D. List of key participants
- E. Marketing plans and plans for center growth over the next five years
- F. Phase II Center:
 - a. Evaluator's report (for final year of Phase I)
 - b. Membership certification for fifth and final year of Phase I
 - c. Commitment letters from potential members seeking to join the center
 - d. List of key accomplishments during Phase I
 - e. Number of publications per year
 - f. Number of graduated students (trained in the center) graduated each year
 - g. Number of patents generated per year
- G. Phase III Center:
 - a. Evaluator's report (for final year of Phase II)
 - b. Membership certification for fifth and final year of Phase II
 - c. Commitment letters from potential members seeking to join the center
 - d. List of key accomplishments during Phase II
 - e. Number of publications per year
 - f. Number of graduated students (trained in the center) graduated each year
 - g. Number of patents generated per year

4. Proposals that fail to address the following items will also be considered non-responsive and will be returned without review.

- a. Data Management Plan (reference the NSF GPG http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg)
- b. Mentoring Plan, required if funds are included on line "B.1 Post Doctoral Scholars"
- c. A proposal requesting more than the allowable amount as outlined in Section III below
- d. A proposal with documents placed in the "Additional Single Copy Documents" module in FastLane, other than Suggested Reviewers and/or Proprietary Information
- e. Any proposal submitted as "Preliminary Proposal"

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Industry/University Cooperative Research Centers Program (I/UCRC)

Synopsis of Program:

The Industry/University Cooperative Research Centers (I/UCRC) program develops long-term partnerships among industry, academe, and government. The centers are catalyzed by a small investment from the National Science Foundation (NSF) and are primarily supported by industry center members, with NSF taking a supporting role in the development and evolution of the center. Each center is established to conduct research that is of interest to both the

industry members and the center faculty. An I/UCRC contributes to the nation's research infrastructure base and enhances the intellectual capacity of the engineering and science workforce through the integration of research and education. As appropriate, an I/UCRC uses international collaborations to advance these goals within the global context.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Larry Hornak, Lead I/UCRC Program Director, Directorate for Engineering, telephone: (703) 292-2678, fax: (703) 292-9057, email: lhornak@nsf.gov
- Shashank Priya, Program Director, Directorate for Engineering, telephone: (703)292-4709, fax: (703)292-9057, email: spriya@nsf.gov
- Rita Rodriguez, Program Director, Directorate for Computer & Information Science & Engineering, 1175 N, telephone: (703) 292-8950, fax: (703) 292-9010, email: rodrigu@nsf.gov
- Raffaella Montelli, Program Director, Directorate for Geosciences, 785S, telephone: (703)292-4361, fax: (703)292-9023, email: rmontell@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources
- 47.079 --- International and Integrative Activities (IIA)
- 47.081 --- Office of Experimental Program to Stimulate Competitive Research

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 2 to 8 full center awards and 4 to 6 planning grant awards annually.

Anticipated Funding Amount: \$12,000,000 - - Funding is dependent on the availability of funds. Anticipated funding includes continued annual support and supplemental requests for existing centers.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Only U.S. academic institutions with graduate research programs may apply. Please see below for details on organizational eligibility information including:
 - Research and graduate program requirements, and
 - Letter of intent, planning grant, and full center proposal requirements.

Who May Serve as PI:

The PI at any institution participating in an I/UCRC proposal must be a tenured faculty member. Waivers may be requested when petitioned by the PI's supervisor (Chairman of the Department or the Dean). In addition, the center or site director must be the PI. PIs with an active award for any NSF I/UCRC research center are not eligible to apply for another Phase I award.

Awardees of planning grants to establish new centers must complete their planning grant workshops (with NSF Program Director representation) before submitting full proposals.

Eligibility to submit a full proposal to establish a new center is dependent upon the PI completing one of the following (this does not apply to joining established centers) activities:

- NSF sponsored boot camp (see Section III. Award Information) - NSF will reimburse the center/site director for travel expenses.
- Submission of a Letter of Intent (LOI) and successful fulfillment of the requirements of a planning grant award ((see Section V. Proposal Preparation and Submission Instructions).

Limit on Number of Proposals per Organization:

Any institution may submit multiple-university center proposals provided that the proposed research topics involve different disciplines and support different industries.

Grantee institutions that have an active, single-university I/UCRC award are not eligible to apply for another single-university center award; however, they may apply for a multi-university center award.

A center site may apply for a Phase II (years 6 through 10) grant if it meets the Phase II minimum requirements specified in the solicitation as well as having satisfactorily completed the Phase I (years 1 through 5) grant.

A center site may apply for a Phase III (years 11 through 15) grant if it meets the minimum Phase III requirements

specified in the solicitation as well as having satisfactorily completed the Phase II (years 6 through 10) grant.

Graduated centers that have successfully completed a Phase II award within the last 10 years may apply for a Phase III award.

Limit on Number of Proposals per PI or Co-PI: 1

PIs can only submit one proposal per submission period. Co-PIs can only participate in one proposal per submission period.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
 - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.
 - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is required. See the section on Indirect Cost (F&A) Limitations.
- **Indirect Cost (F&A) Limitations:**

Cost Sharing is required for full centers and is provided through a limitation on indirect costs recovered on membership fees. The unrecovered indirect costs on the required minimum annual membership fee total (\$150,000 for Phase I, \$175,000 for Phase II and III) is the minimum mandatory proposed cost sharing level.

The amount of indirect costs for NSF funds should be calculated by applying the current negotiated indirect cost rate(s) to the approved base(s). However, University recovery of indirect costs (F&A) shall be limited to 10% of all center membership fees collected from each center member organization. See Special Award Conditions.

- **Other Budgetary Limitations:** Not Applicable

C. Due Dates

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. proposer's local time):
 - January 06, 2014
 - First Monday in January, Annually Thereafter
 - June 27, 2014
 - Last Friday in June, Annually Thereafter
- **Planning Grant and Full Center Proposal Deadline(s)** (due by 5 p.m. proposer's local time):
 - March 04, 2014
 - First Tuesday in March, Annually Thereafter
 - Planning Grant and Full Center Proposal
 - September 26, 2014
 - Last Friday in September, Annually Thereafter
 - Planning Grant and Full Center Proposal

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions: Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

The Industry/University Cooperative Research Centers (I/UCRC) Program was initiated in 1973 to develop long term partnerships among industry, academe and government. The National Science Foundation (NSF) invests in these partnerships to promote research programs of mutual interest, contribute to the nation's research infrastructure base, enhance the intellectual capacity of the engineering or science workforce through the integration of research and education, and facilitate technology transfer. As appropriate, NSF encourages international collaborations that advance these goals within the global context.

The I/UCRC program seeks to achieve these goals by:

- Contributing to the nation's research enterprise by developing long-term partnerships among industry, academe, and government;
- Leveraging NSF funds with industry to support graduate students performing industrially relevant research;
- Expanding the innovation capacity of our nation's competitive workforce through partnerships between industries and universities; and
- Encouraging the nation's research enterprise to remain competitive through active engagement with academic and industrial leaders throughout the world.

To meet these needs, multi-university I/UCRCs are preferred to single-university I/UCRCs because multi-university centers contribute to an increased research base as well as to increased interaction among center participants. The centers are catalyzed by a small investment from NSF with primary support derived from private and public sector. The NSF takes a supporting role in the development and evolution of the I/UCRC, providing a framework for membership and operations as well as best practices derived from extensive center evaluation.

The I/UCRC program initially offers five-year (Phase I) continuing grants. This five-year period of support allows for the development of a strong partnership between the academic researchers and their industrial and government members. A significant proportion of a center's support is expected to come from industrial, state, and other funds. As a center progresses, it is likely to have increased opportunities for funding from additional firms, other federal agencies and laboratories, and state and local governments; thus, increasing the leverage of NSF funds. After five years, centers that continue to meet the I/UCRC program requirements may request support for a second five-year (Phase II) period. These grants allow centers to continue to grow, and to leverage and diversify their memberships and research portfolio during their Phase II period. After ten years, a Phase III grant provides a third five-year award for centers that demonstrate significant impact on industry research as measured through robust and sustained membership, student impact, annual reports, site visits, and adherence to I/UCRC requirements. Centers are expected to be fully supported by private and public partners after fifteen years as an I/UCRC.

II. PROGRAM DESCRIPTION

A comprehensive range of disciplines and skills is often necessary to address research issues of interest to industry, and thus it is often necessary to form a consortium of universities to achieve a critical mass of interdisciplinary research capabilities for the formation of a center. In that case, one of the universities acts as the lead site for the center. Lead university and partner university research sites are each expected to attract industrial support for the center.

Requirements of an I/UCRC

A center in the I/UCRC Program will have the following characteristics:

- A strong partnership among universities, industry, and other organizations participating in the center;
- A research scope unique among I/UCRCs that represents the shared interests of the center and the industry sector that it

serves;

- Center goals and objectives and a research roadmap for achieving them defined in collaboration with the center membership;
- A membership of private and public sector organizations that fund the shared research portfolio of the center;
- An organization led by a director at the lead institution with site co-directors at the other universities, a diverse team of faculty and students;
- A cooperative operational model for the center that is consistent with I/UCRC Best Practices;
- Twice yearly meetings at which projects are reviewed and research findings are presented, and at least one meeting at which new projects are selected;
- A process based on I/UCRC Best Practices for the engagement of members in the cultivation, selection, funding and guidance of research projects;
- Effective implementation of Best Practices, such as the use of executive project summaries (see the Gray and Walters book at <http://www.ncsu.edu/iucrc/PurpleBook.htm>) that facilitate research project evaluation by members with respect to project scope, budget, duration, first year deliverables, and milestones;
- Graduate student involvement in high-quality research projects, thus developing students who are knowledgeable in industrially relevant research;
- One membership agreement for members through which intellectual property developed by the center is shared (see the Sample Membership Agreement at http://www.nsf.gov/eng/iip/iucrc/sample_agreement_form.jsp/);
- One membership agreement for members who are part of a trade organization or associations (see the Sample Membership Agreement for Associations and Institutes at http://www.nsf.gov/eng/iip/iucrc/sample_agreement_form.jsp/);
- An effective plan that outlines how the center will grow, recruit new members, retain existing members, and build relationships that attract companies to invest in the center's research; and
- Formal evaluation of the industry and university interaction conducted by an independent evaluator.

An I/UCRC has the following structure/requirements:

- Industrial support:
 - Members are comprised of industrial firms, organizations, and non-NSF federal agencies;
 - Members can be:
 - Full members - with full membership rights who support the center.
 - Associate members - memberships with reduced rights commensurate with their support for the center.
 - An example of how memberships count for a center site (that has a \$50,000 full membership fee), and how these memberships translate to votes regarding which projects proposed during a meeting will be selected as center projects is as follows:
 - Company A paying \$50,000 in membership fees counts as *one full member* and *one vote*;
 - Company B paying \$100,000 in membership fees counts as *one full member* and *two votes*;
 - Company C paying \$150,000 in membership fees counts as *one full member* and *two votes* per signed membership agreement; and,
 - Company D paying \$25,000 counts as *half member* and *half a vote*.
 - Thus, in this particular example, the center site has *3.5 members* and *membership fees totaling \$325,000*.
 - A single university center must have a minimum of \$400,000 annually in membership fees with a minimum of eight *full members*.
 - A multi-university Phase I center must have a minimum of \$300,000 annually in membership fees; Multi-university Phase II and Phase III centers must have a minimum of \$350,000 annually in membership fees.
 - A multi-university center must have a minimum of six *full members* with a membership fee of \$25,000 or more per year.
 - Each research site in a Phase I multi-university center must have a minimum of \$150,000 annually in cash membership fees and a minimum of three *full members*. However, in-kind contributions (with NSF's approval), may be allowed totaling to no more than *one full membership fee* for the first year of operation. After the first year, each site must show \$150,000 minimum annually in membership fees including in-kind contributions. In-kind contributions considered to be part of the \$150,000 after the first year of operation must be approved by the Industrial Advisory Board (IAB).
 - Multi-university Phase II and Phase III sites must have a minimum of \$175,000 in cash membership fees and a minimum of three *full members*. After the first year of Phase II or Phase III, each site must show \$175,000 minimum annually in membership fees including in-kind contributions.
 - After the first year of any phase, all in-kind contributions for membership fees must be approved by the IAB; see below.
- Membership fee collection, achieved in one of two ways:
 - Individually, by each university site with annual certification by the Sponsored Research Office (SRO) of each university of the collected membership fees, or
 - Centrally, by the lead university site with annual certification by the lead's Sponsored Research Office (SRO) of each university to each center site for that site's memberships, consistent with a Memorandum of Understanding (MOU) among all center site universities.
- Center policies that meet NSF requirements for a Sample Membership Agreement with respect to membership fees and rights, intellectual property and publication.
- Center management and organization:
 - A center director at the lead university site responsible for all aspects of center operations;
 - Co-directors that manage their university team's researchers and collaborate with the lead site and other sites within the center (for multi-university centers);
 - An Industrial Advisory Board (IAB) comprised of center members, with an elected chair, that reviews and recommends on all research activities funded all or in part by membership fees;
 - A university policy committee that facilitates the operation of the center while ensuring operation within the policies of the universities;
 - A uniform and consistent policy for handling memberships and member privileges across all sites of a center;
 - A collaborative and participative research environment;
 - Graduate and other student involvement; and
 - A plan for addressing broadening participation of underrepresented groups in science and engineering.

Other requirements of an I/UCRC include reporting and evaluation:

- Centers are required to submit reports as specified in Section VII. Award Administration Information, Subsection C. Reporting Requirements.
- Centers must have an independent evaluator. The minimum evaluator selection criteria include:
 - Expertise and experience in conducting and communicating evaluation-related research in the behavioral-social sciences;
 - Knowledge of and/or experience with industry-university cooperative research, ideally from involvement with the I/UCRC Program; and
 - Independence from the center being evaluated: a) no employment in the same administrative unit as the center; b) no

reporting relationship to an individual with administrative responsibility for the center; and c) no financial interests in the center other than as a paid evaluator.

Evaluators are paid by the lead institution with funds provided by the NSF using the formula outlined in Section III, Award Information. These funds are intended to cover expenses and efforts expended by evaluators in the performance of their duties.

The center evaluator is responsible for:

- Preparing an annual report of center activities (including the number of members at each site and the membership fees received by each site) with respect to industrial collaboration during the previous year (which is appended to the center's annual report to NSF);
- Conducting a survey of all center participants to measure satisfaction with center activities;
- Compiling a set of quantitative indicators determined by NSF to analyze the management and operation of the center;
- Participating in I/UCRC center and informational meetings including:
 - Semi-annual IAB meetings;
 - I/UCRC Annual Meeting (usually held in January near NSF);
 - Annual evaluator meetings (usually held in June near NSF); and
- Reporting bi-annually to NSF, consistent with NSF requirements and those of the evaluation program outlined at www.ncsu.edu/iucrc, within a month of each IAB meeting using means specified by NSF I/UCRC program officials.

International Partnerships and Project Supplements

Collaboration with international research entities can advance I/UCRC objectives. An established I/UCRC may submit a supplement request for collaborative work with an international research entity constituting the formation of an international site of the I/UCRC. International site supplemental requests must include a:

- Plan to interact with the international research site;
- Description of the proposed research projects;
- Description of the infrastructure that is in place to enable collaboration;
- Evidence that the international research entity has adequate partner funding in place to support the proposed projects;
- Formal agreement between the foreign and U.S.-based site that replicates the provisions for IP, copyrights, publication delays, and similar issues identified in the I/UCRC membership agreement; and
- Letter from the I/UCRC IAB that endorses the international collaboration and proposed research projects.

The I/UCRC's international research site's supplement expires after one year. The I/UCRC must, therefore, submit an annual supplement request using FastLane for continuation of the international collaborative partnership. Each new supplemental funding request for continuation of the international collaborative partnership must address the outcomes and benefits realized by the international partnership in the prior award period.

Each I/UCRC is limited to one supplement per country to support an international site.

I/UCRCs may also request funding for project-specific collaborations with international partners. Please see <http://www.nsf.gov/pubs/2011/nsf11074/nsf11074.pdf> for more information in the *Dear Colleague Letter-Collaborative Opportunity for Research Between IUCRCs (CORBI)*. International CORBI projects must also meet the six bulleted points mentioned above for I/UCRC international sites.

III. AWARD INFORMATION

Planning Grant Proposals for New Centers and Sites

The award amount for a planning grant seeking to establish a new center is \$11,500 per academic institution with a 12-month duration. The \$11,500 is for all applicable planning expenses including travel to the "boot camp" and is inclusive of applicable IDCs. The camp informs planning grant awardees about the planning process, the IUCRC Model, member recruitment and center operation consistent with best practices. For awardees of a planning grant to establish a new site of an existing center, the award amount is \$10,000 per academic institution (inclusive of applicable IDCs) with a 12-month duration, and boot camp attendance is optional.

The planning grant lead institution will also receive \$3,000 for the evaluator, plus applicable indirect IDCs on the evaluator amount. The \$3,000 is to be paid directly to an evaluator. The evaluator will guide the directors in conducting a successful planning grant meeting and attend the first planning meeting for a center.

Expectations from the conclusion of a planning grant meeting:

- PIs send executive summaries of all potential research projects to all prospective center members.
- Each prospective member is asked to rank the list of research projects showing what came out of the planning meeting based on each member's priorities.
- Each company sends back the prioritized list of research projects to the PIs.
- PIs sort through and identify the top 5 research projects common to all sponsors.
- PIs report back the titles of the top 5 research projects to NSF and all potential sponsors.
- PIs list the top 5 projects in the full center proposal during submission.
- If awarded, these vetted research projects effectively form the foundation of the proposed project set presented at the first Industrial Advisory Board (IAB) meeting.

Full Center Awards - Continuing or Standard Grant

Phase I - First Five Year Center Award

Multi-institutional center proposals are given preference over single institutional proposals. The initial Phase I I/UCRC award to a center has a potential duration of five years. NSF support is intended to augment the support that a center receives from industry and other sponsors. The I/UCRC program uses the following funding formulas. Multi-institutional center sites with an annual industry membership participation between \$150,000 to \$300,000 can receive up to \$65,000 annually. (Note - the center must obtain a total of \$300,000 in membership participation to receive an award.) Multi-university research sites with \$300,000 or more in annual memberships can receive up to \$85,000 annually. Single-university I/UCRCs obtaining \$400,000 or more in annual memberships can receive up to \$80,000 annually.

Phase II - Second Five Year Center Award

Continuing I/UCRC program support is available for centers fully meeting the I/UCRC operational and membership requirements. A Phase II second five-year center award may be granted upon a favorable NSF recommendation for award by the NSF Program Director and concurrence by the Division Director. Multi-institutional center sites with yearly memberships between \$175,000 and \$350,000 will receive \$45,000 annually. Multi-university center sites with over \$350,000 in annual memberships will receive \$65,000 annually. (Note the center must obtain a total of \$350,000 or more to receive an annual award.) Single-university I/UCRCs obtaining over \$400,000 a year in memberships will receive \$60,000 annually.

Phase III - Third Five Year Center Award

I/UCRC program support is available for current and graduated multi-institutional centers that continue to fully meet I/UCRC operational and membership requirements. For the purpose of this solicitation, a graduated center is one that has successfully completed a Phase II award within the last 10 years. A Phase III center award may be awarded upon NSF review and a favorable NSF recommendation by the Program Director and concurrence by the Division Director. Research sites with memberships at or above \$175,000 a year will receive \$15,000 annually. There will be \$25,000 available for the lead institution in a multi-university research center.

Additional Supplemental Funding and Support for the Lead Institution

The lead institution is defined by the I/UCRC program as the institution that assumes primary coordination, general management and operations responsibilities including marketing, communications, dissemination, and evaluation of a multi-university center. Additional funds may be requested by the lead institution in a center proposal to help support these functions. Additional funds may be requested in a new center proposal by the lead institution to help support these functions. Established centers with changes to their number of sites can request support (changes for site coordination) via a supplement. In this case, the lead institution would make an annual request for supplemental funding consistent with the center's award phase and the current number of sites within the center. Contact the NSF Cognizant Program Director listed within this document if guidance is needed in preparing a supplemental request.

Multi-University Center Coordination

The lead institution for a Phase I and Phase II center receives an additional \$10,000 per year (inclusive of applicable IDCs) for each added institution in the center to offset the added administrative functions. The lead institution of a Phase III center receives a fixed amount of \$25,000 independent of the number of sites.

Center Operations and Communications

The lead institution for a Phase I and Phase II center receives an additional \$20,000 (inclusive of applicable IDCs) in years 1 and 2, and \$10,000 (inclusive of applicable IDCs) in years 3 through 5 to support innovative and effective center operations and communications, including dissemination and marketing consistent with established program best practices.

Evaluator Support

In addition, NSF will provide the lead institution with annual funds for an evaluator for Phase I and II awards as outlined below. The lead institution receives the following each year, all of which must be paid to the center evaluator. The following evaluator direct costs, plus applicable indirect costs are to be budgeted:

- A one-site center receives \$9,000 for the evaluator.
- A two-site center receives \$15,000 for the evaluator.
- A three-site center receives \$18,000 for the evaluator.
- A four or more site center receives \$21,000 for the evaluator.

The evaluator uses these funds to attend the bi-annual IAB meetings, write annual and semi-annual IAB highlight reports, and attend the annual directors' and evaluators' meetings. These fees are intended to cover expenses and efforts incurred by the evaluator.

Evaluators for a Phase III award must attend the annual IAB meeting, the evaluators' meeting, and the annual directors' meeting for the center. NSF provides \$9,000 (plus applicable indirect costs) to the lead institution for evaluator direct costs, all of which must be paid directly to the evaluator.

Deputy Director Support

At NSF's discretion, a center with eight or more sites may submit a request for supplemental funding to help support a deputy director. The "Deputy Director" request for supplemental funding must outline specific responsibilities that are measurable and which will benefit all sites within the center. The funding level (inclusive of applicable IDCs) of these requests is based on the center phase and annual award for the lead institution as shown below:

- Phase I center with a \$55,000 annual award may receive \$33,000.
- Phase I center with a \$80,000 annual award may receive \$45,000.
- Phase II center with a \$40,000 annual award may receive \$25,000.
- Phase II center with a \$60,000 annual award may receive \$35,000.
- Phase III center with a \$15,000 annual award may receive \$12,000.
- Phase III center with a \$25,000 annual award may receive \$18,000.

International I/UCRC Support

To advance I/UCRC goals within the global context, an I/UCRC may receive a \$25,000 supplement annually for an international site or collaboration. These funds are to be used for expenses related to the international activity including site director(s) and evaluator international travel, and support for research visits by U. S. students and junior researchers. No NSF funds are to be used by non-U.S. participants.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Only U.S. academic institutions with graduate research programs may apply. Please see below for details

on organizational eligibility information including:

- Research and graduate program requirements, and
- Letter of intent, planning grant, and full center proposal requirements.

Who May Serve as PI:

The PI at any institution participating in an I/UCRC proposal must be a tenured faculty member. Waivers may be requested when petitioned by the PI's supervisor (Chairman of the Department or the Dean). In addition, the center or site director must be the PI. PIs with an active award for any NSF I/UCRC research center are not eligible to apply for another Phase I award.

Awardees of planning grants to establish new centers must complete their planning grant workshops (with NSF Program Director representation) before submitting full proposals.

Eligibility to submit a full proposal to establish a new center is dependent upon the PI completing one of the following (this does not apply to joining established centers) activities:

- NSF sponsored boot camp (see Section III. Award Information) - NSF will reimburse the center/site director for travel expenses.
- Submission of a Letter of Intent (LOI) and successful fulfillment of the requirements of a planning grant award ((see Section V. Proposal Preparation and Submission Instructions).

Limit on Number of Proposals per Organization:

Any institution may submit multiple-university center proposals provided that the proposed research topics involve different disciplines and support different industries.

Grantee institutions that have an active, single-university I/UCRC award are not eligible to apply for another single-university center award; however, they may apply for a multi-university center award.

A center site may apply for a Phase II (years 6 through 10) grant if it meets the Phase II minimum requirements specified in the solicitation as well as having satisfactorily completed the Phase I (years 1 through 5) grant.

A center site may apply for a Phase III (years 11 through 15) grant if it meets the minimum Phase III requirements specified in the solicitation as well as having satisfactorily completed the Phase II (years 6 through 10) grant.

Graduated centers that have successfully completed a Phase II award within the last 10 years may apply for a Phase III award.

Limit on Number of Proposals per PI or Co-PI: 1

PIs can only submit one proposal per submission period. Co-PIs can only participate in one proposal per submission period.

Additional Eligibility Info:

A Letter of Intent (LOI) is required and must be submitted before the institution may submit a planning grant proposal.

In general, institutions must have been awarded a planning grant before they are eligible to submit a full center proposal. NSF may waive this requirement if the institution wants to join an existing center, has the approval from the center director to join, and meets the minimum membership requirements to create a research site. If this requirement is waived, a Letter of Intent (LOI) is still required.

For a new research center, eligible academic institutions must have a new research focus with potential industry members that differs significantly from those found in planned, current, and graduated I/UCRCs. Please see the I/UCRC center directory at <http://www.nsf.gov/eng/iip/iucrc/directory/index.jsp>. Institutions may participate as a research site with these centers.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent(required):

Guide to Submission of a Letter of Intent for an Industry/University Cooperative Research Center

Format- Letter of Intent

Letters of intent must be submitted for each planning grant proposal by each institution participating in a center via FastLane, (<http://www.fastlane.nsf.gov/fastlane.jsp>). Proposed centers and sites are potentially viable when they:

- Fit within the industry and university collaborative scope;
- Are economically important to the research area;
- Do not significantly duplicate the research thrusts of other I/UCRCs (for new centers); and
- Complement existing center strengths (for site addition to an existing center).

Letter of Intent Preparation Instructions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- Sponsored Projects Office (SPO) Submission is required when submitting Letters of Intent

- A Minimum of 0 and Maximum of 2 Other Senior Project Personnel are allowed
- A Minimum of 0 and Maximum of 10 Other Participating Organizations are allowed
- List and describe research thrust areas is required when submitting Letters of Intent
- List of participating center sites (universities) is required when submitting Letters of Intent
- List of potential members is required when submitting Letters of Intent
- Submission of multiple Letters of Intent is allowed

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

Important Proposal Preparation Information: FastLane will check for required sections of the full proposal, in accordance with *Grant Proposal Guide* (GPG) instructions described in Chapter II.C.2. The GPG requires submission of: Project Summary; Project Description; References Cited; Biographical Sketch(es); Budget; Budget Justification; Current and Pending Support; Facilities, Equipment & Other Resources; Data Management Plan; and Postdoctoral Mentoring Plan, if applicable. If a required section is missing, **FastLane will not accept the proposal.**

Please note that the proposal preparation instructions provided in this program solicitation may deviate from the GPG instructions. If the solicitation instructions do not require a GPG-required section to be included in the proposal, insert text or upload a document in that section of the proposal that states, "Not Applicable for this Program Solicitation." Doing so will enable FastLane to accept your proposal.

Please note that per guidance in the GPG, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. Unless otherwise specified in this solicitation, you can decide where to include this section within the Project Description.

(1) Guide to Submission of a Planning Grant Proposal for an Industry/University Cooperative Research Center

Introduction- Planning Grant

Planning grant proposals are accepted only if the Letter of Intent describing a proposed I/UCRC has been approved by an I/UCRC program director. Planning grants are used to plan the joint industry and university research agenda and to determine the feasibility and viability of developing a center.

Format- Planning Grant

A planning grant proposal is submitted as a full proposal. The title for the proposal must be headed as "Planning Grant: I/UCRC for AREA" where area is the research area for which the center is being proposed. **DO NOT SUBMIT A PLANNING GRANT AS A PRELIMINARY PROPOSAL OR IT WILL BE RETURNED WITHOUT REVIEW.**

Project Summary

As specified in Chapter II, Section C.2.b of the NSF Grant Proposal Guide, the proposal must contain a one-page summary of the proposed project not more than one page in length. The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity. Proposals that do not contain the Project Summary, including an overview and separate statements on intellectual merit and broader impacts will not be accepted by FastLane or will be returned without review.

Project Description (limited to 15 pages) should include:

A. Planning Grant Objective (one page limit)

- Objective - brief statement of the planning grant's objective (which should be a meeting with industry and university to shape an initial research agenda for the planned center);
- Strategy - how your objective will be met;
- Potential members - identify members who are likely to join the proposed center and the plan to recruit them; and
- Planning meeting arrangements including:
 - Proposed location;
 - Meeting format and organization;
 - Responsibilities of staff and presenters; and
 - Draft agenda.

B. Planned Center

Provide a full description for the envisioned center that serves as a blueprint for action.

- Provide a general analysis of the industry on which the proposed center plans to focus; how that industry affects the nation's economic health; and its research interests and needs, especially in those areas of research that could be considered appropriate for the proposed center;
- Provide a description of the center's capabilities to conduct research addressing the industrial needs;
- Describe the proposed center's expected policies, guidelines, organizational structure, and operational procedures within the I/UCRC framework; and
- Present a plan for addressing broadening participation of underrepresented groups in science and engineering;
- Discuss proposed projects - a one-page description for each envisioned research project covering:
 - experimental plan and a discussion of its industrial relevance and appropriateness for the center;
 - project objectives;
 - proposed team (management and staff);
 - proposed first year and end of project deliverables;
 - proposed experimental plan;
 - determination of milestones and time to completion; and
 - determination of annual and total cost to completion.

Please note that per guidance in the GPG, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. You can decide where to include this section within the Project Description.

Supplementary Documents:

Include these required planning grant documents in the "Supplementary Documents" section of FastLane (For Grants.gov users, supplementary documents should be attached in Field 12 of the R&R Other Attachments.):

- Proposed center marketing plan showing target industry or market segmentation, proposed marketing activities (including promotion and advertising), pricing structure, and membership variations;
- Staffing plan with a responsibility matrix showing the roles that the proposed center director, site directors, and other researchers will have in performing this planning study;
- Sample Membership Agreement for industry partners in accordance with the I/UCRC sample agreement at http://www.nsf.gov/eng/iip/iucrc/sample_agreement_form.jsp and an appropriate sample Membership Agreement for Associations and Institutes (if any) at <http://www.nsf.gov/eng/iip/iucrc/>;
- Universities submitting planning grant proposals seeking to join existing centers must have their membership agreement forms aligned with the one in use at the center;
- Draft Agenda - for the meeting consistent with I/UCRC best practices (http://www.nsf.gov/eng/iip/iucrc/plan_implement_center.jsp);
- Potential center member letters - (six letters of interest minimum per institution) from potential organization members noting that the center's concept and proposed research agenda have the potential for receiving support from that organization and that they would consider joining if the center were formed. *Proposals without the sufficient number of letters will be returned without review;*
- Proposals for new centers with potential overlap of an existing center noted in their LOI response must provide evidence (usually a letter from the other center director) that their research thrust does not significantly duplicate (less than 10%) other I/UCRC efforts. This evidence is not required when joining an existing center as a research site;
- Proposals for new sites to existing centers must include letters from the center director and IAB Chair articulating the value of the new site and the vetting process the new site underwent through which this value was determined;
- **Mentoring Plan** - Each proposal that requests funding to support postdoctoral researchers must include, as a one-page supplementary document, a description of the mentoring activities that will be provided for such individuals. Proposals that do not comply with this requirement will not be accepted or will be returned without review (see Chapter II of the NSF GPG for further information about this requirement); and
- **Data Management Plan** - The proposal must describe plans for data management and sharing of the products of research consistent with I/UCRC operation, or assert the absence of the need for such plans.

Budget

Support is generally for travel, an industry planning meeting, associated meeting publications, evaluator for the lead site, and faculty time. All line items in the proposed budget must be justified.

(2) Guide to Submission of a Center Proposal for an Industry/University Cooperative Research Center

Introduction - Center Proposal

To be eligible to submit a full Phase I center proposal, either for a new center or site addition to an existing center, institutions must have submitted a Letter of Intent and have been awarded a planning grant. The requirement for a planning grant proposal may be waived by NSF provided that the research site meets the minimum membership requirements and has the approval from the center director to join an existing center. Phase II and Phase III proposals require the successful completion of prior phase awards.

Proposal Format - Center Proposals

A Phase I proposal should reflect the unique combination of the proposed center's research interests, capabilities, and potential for working with industry. A Phase II or Phase III proposal should show the outcomes and continuing plans for the realization of this potential through application of I/UCRC best practices and achievement of center goals and objectives. These features should be discussed in sufficient detail to facilitate review in accordance with the I/UCRC Program requirements.

Project Summary

As specified in Chapter II, Section C.2.b of the NSF Grant Proposal Guide, the proposal must contain a summary of the proposed project not more than one page in length. The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity. Proposals that do not contain the Project Summary, including an overview and separate statements on intellectual merit and broader impacts will not be accepted by FastLane or will be returned without review.

For center proposals, the overview section of the project summary should include a brief description of the proposed center, sites involved, and scope of the research program.

Project Description

The following narrative outline is recommended for the project description. This narrative should not be longer than 30 pages.

A. Project Overview (three-page limit)

In no more than three pages, describe the technical focus of and need for the center. Describe the technical area, the industry, the industrially relevant research required, and the expertise and resources that will be used to address this need. For Phase II and Phase III renewals, describe how these have evolved over the life of the center and been impacted by the center.

B. Center Structure and Operations

Proposers must discuss the following issues in their proposals:

- Available facilities and infrastructure;
- Center leadership, including director's background, qualifications, and management capability;
- The membership agreement including:
 - Intellectual property policies in accordance with the Bayh-Dole Act that permit non-exclusive, royalty-free licenses for industrial center members and the possibility of exclusive, royalty-bearing licenses;
 - Publication delay policies; and
 - The membership structure of the center, as well as the role of members in the center and the specific benefits of membership categories
- Potential issues that might hinder the center and what steps could be taken to minimize those risks;
- I/UCRC policies and operations including process for project proposal cultivation, project selection, and project monitoring;
- The proposed evaluator and plans for the center to meet I/UCRC evaluation criteria; and
- The membership of the university policy committee.

C. Research Plan

Envisioned Projects - describe each envisioned research project that was vetted during the planning meeting in up to three pages each that includes:

- A discussion of its industrial relevance and appropriateness for the center;
- Project objectives;
- Proposed team (management and staff) with plans to address broadening participation;
- Proposed deliverables;
- Project duration, milestones, and annual proposed deliverables;
- Determined business or industry need;
- Description of the available research facilities; and
- Determination of the time to completion and cost.

Please note that per guidance in the GPG, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. You can decide where to include this section within the Project Description.

Budget Sheet

The proposal should include:

- A proposed budget for NSF funds for each of the five years of center operation and a five-year summary budget (including funds to support the independent evaluator) with budget justifications included for all line items; and
- A separate budget table listing and describing all projected major sources of funding and costs over the five-year proposed period of center operation.

Supplementary Documents

The following information should be added to the "Supplementary Documents" section of FastLane (For Grants.gov users, supplementary documents should be attached in Field 12 of the R&R Other Attachments.)

- A copy of the membership agreement document. For universities seeking to join existing centers, the membership agreement must be aligned with that in use at the existing center.
- A list of participating center members and their letters of financial commitment. It is imperative to include commitment letters from potential members that meet the requirements of Section III. Award Information for Center Awards. *Proposals failing to meet the minimum funding level of committed members may be returned without review.* The minimum number of members needed is outlined in Section II. Program Description under Requirements of an I/UCRC. *The number of commitment letters must be sufficient to meet the required number of memberships or the proposal may be returned without review.*
- If applicable, list collaborations with additional institutions, including any international institutions. All policies and procedures for a center and its sites should be the same.
- A list of the individuals who are key to the center, and other participating individuals, noting diversity. The list should identify institutional and departmental affiliation or discipline, and should include biographical information on the center director and all key faculty members or other individuals from participating institutions who will be directly involved in the development, operation, and evaluation of the center. The list of publications for these individuals should be limited to the five most relevant to the proposed research.
- Marketing plans and plans for center growth over the next five years showing target industry or market segmentation, proposed marketing activities (including promotion and advertising), pricing structure, and membership variations.
- Phase II and III center renewal proposals must include the following: evaluator's report and the membership certification for the final and fifth year of the current award, and presentation and analysis by the center of key structural data provided annually by the center during its prior phase(s); for example, publications, memberships, income, students, and IP.
- Phase II and III center renewal proposals must include a list of key accomplishments including spin-offs and technology transfer (e.g. increased R&D efficiencies, improved or new processes, improved or new products, and spillover benefits to technology adopters).
- **Mentoring Plan** - Each proposal that requests funding to support postdoctoral researchers must include, as a one-page supplementary document, a description of the mentoring activities that will be provided for such individuals. Proposals that do not comply with this requirement will not be accepted by FastLane or will be returned without review (see Chapter II of the NSF GPG for further information about this requirement).
- **Data Management Plan** - The proposal must describe plans for data management and sharing of the products of research consistent with I/UCRC operation, or assert the absence of the need for such plans.

B. Budgetary Information

Cost Sharing:

Cost sharing is required. See the section on Indirect Cost (F&A) Limitations.

Cost Sharing is required for full centers and is provided through a limitation on indirect costs recovered on membership fees. The unrecovered indirect costs on the required minimum annual membership fee total (\$150,000 for Phase I, \$175,000 for Phase II and III) is the minimum mandatory proposed cost sharing level.

To determine the amount of cost sharing to be entered on Line M, calculate the difference in indirect charges recovered on the required minimum membership fees at your institution's current negotiated indirect cost rate minus the indirect costs recovered at the 10% rate. The proposed cost sharing must be shown on Line M on Year 1 of the proposal budget. Should an award be made, the cost sharing commitment must be met prior to award expiration.

The proposed cost sharing must be shown on Line M on the proposal budget. Documentation of the availability of cost sharing must be included in the proposal. Only items which would be allowable under the applicable cost principles, if charged to the project, may be included as the awardee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts, and may be cash or in-kind (2 CFR § 215.23). It should be noted that contributions counted as cost-sharing toward projects of another Federal agency may not be counted towards meeting the specific cost-sharing requirements of the NSF award. All cost-sharing amounts are subject to audit. Failure to provide the level of cost-sharing required by the NSF solicitation and reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF.

Administrative requirements related to cost sharing may be found in 2 CFR § 215.23, "Cost Sharing or Matching." For additional information on cost principles consult: 2 CFR Part 220, Cost Principles for Educational Institutions (OMB Circular A-21); or 2 CFR Part 230, Cost Principles for Nonprofit Organizations (OMB Circular A-122), as applicable.

Indirect Cost (F&A) Limitations: The amount of indirect costs for NSF funds should be calculated by applying the current negotiated indirect cost rate(s) to the approved base(s). However, University recovery of indirect costs (F&A) shall be limited to 10% of all center membership fees collected from each center member organization. See Special Award Conditions.

C. Due Dates

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. proposer's local time):

January 06, 2014

First Monday in January, Annually Thereafter

June 27, 2014

Last Friday in June, Annually Thereafter

- **Planning Grant and Full Center Proposal Deadline(s)** (due by 5 p.m. proposer's local time):

March 04, 2014

First Tuesday in March, Annually Thereafter

Planning Grant and Full Center Proposal

September 26, 2014

Last Friday in September, Annually Thereafter

Planning Grant and Full Center Proposal

D. FastLane/Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: <http://www.grants.gov/web/grants/applicants.html>. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

Proposers that submitted via FastLane are strongly encouraged to use FastLane to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in the GPG as [Exhibit III-1](#).

A comprehensive description of the Foundation's merit review process is available on the NSF website at: http://nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in [Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018](#). These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (GPG [Chapter II.C.2.d.i.](#) contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including [GPG Chapter II.C.2.d.i.](#), prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to

the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
 - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
 - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

Evaluation

Letters of intent will be evaluated by NSF staff based on the economic importance of the research area, the depth and breadth of the proposed center's research, and whether the proposed research overlaps other I/UCRCs. The NSF evaluation will be furnished to the author of the Letter of Intent. Notification of approval of the Letter of Intent is required before submission of a planning grant proposal.

Planning grant proposals and full center proposals will be competitively reviewed by Ad hoc Review and/or Panel Review, Internal NSF Review, or Site Visit Review. The proposals will be subject to the NSF merit review criteria and the additional criteria given below.

- The envisioned center is consistent with the defining characteristics and operational requirements of an I/UCRC.
- There is enough potential university support, faculty, and facilities involved to build a viable center.
- The planning study will effectively focus on the research interests of an industry that is in a position to support the center, so that it could meet the requirements to submit a center proposal.
- The planning study will effectively use I/UCRC operational requirements for structuring and operating the envisioned center.
- The center has an effective marketing plan to develop a strong contingent of firms and sufficient industry support to be successful and meet the I/UCRC criteria.
- The center proposes to develop a research program that does not duplicate that of an existing I/UCRC (see the link for potential overlaps). (<http://www.nsf.gov/eng/iip/iucrc/directory/index.jsp>).
- The proposal requires cross-disciplinary and cross-departmental participation where appropriate to the research envisioned.
- The NSF reviewers will consider the extent to which there is evidence that the Center will meet the "Requirements of an I/UCRC" as described in Section II. Program Description.
- For I/UCRCs involving international collaborations, reviewers will consider: mutual benefits, true intellectual collaboration with the foreign partner(s), benefits to be realized from the expertise and specialized skills, facilities, sites, and/or resources of the international counterpart, and active research engagement of U. S. students and early-career researchers, where such individuals are engaged in the research.
- Phase II and Phase III proposals will be reviewed as to their previous achievement of NSF's broader impacts, significance and impact of previous research, and efforts of the center in communicating with the public and center members.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, Internal NSF Review, or Site Visit Review.

Proposals that do not exceed \$100,000 in annual funding such as planning grant, Phase II (years 6 through 10), and Phase III (years 11 through 15) proposals, in addition to proposals seeking to join an existing center will be reviewed internally by two or more Program Directors at NSF. However, Program Directors may elect to obtain external reviews to inform their decision. If an external review is to be obtained, then the PI will be so informed in the interest of maintaining the transparency of the review and recommendation process.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will be completed and submitted by each reviewer. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications. After an administrative review has occurred, Grants and Agreements Officers perform the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants

and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)*; or Research Terms and Conditions* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

Special Award Conditions:

University recovery of indirect costs (F&A) shall be limited to 10% of all center membership fees collected from each center member organization. This 10% rate applies to all membership fees collected under the terms of the center membership agreement, including those membership fees over and above minimum required levels in this solicitation. Membership fees constitute program income.

Prior to the start of the new fiscal year and funding period, the Program Director, Program Managers, and the Division Director will review the center on a number of renewal criteria including the following:

1. The degree of collaboration amongst center sites;
2. The extent to which the marketing plan is being pursued;
3. The extent to which the industry/university collaborations are growing;
4. The extent to which the industrial research program is developing; and
5. The extent to which technology transfer is occurring from the center to one or more members of the center.

If the review is satisfactory, the Program Director may recommend support for the next period of the continuing award.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). Within 90 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

Each center site that receives NSF funding must submit an annual report 90 days before the end of their current budget period. The annual report is used as a basis for assessing annual performance and determining continued funding. Incomplete reports are not

accepted by NSF. Evaluators also undergo an annual review that examines the completeness of their reports, participation in the annual director's meeting, participation in the annual evaluators meeting, and the degree of their effectiveness in their center's Industry Advisory Board (IAB) meetings.

The complete annual report has three main sections:

1. Director's Report,
2. Evaluator's Report, and
3. Certification of Membership (annual funds certification for the recently completed reporting period). Membership fees beyond the minimum required are to be addressed in the annual and final project reports

Director's Report

- Center Identification: Award number, year of initial funding, center director name and contact information.
- Research Goals - Goals for the current year.
- Collaborations with other universities (if applicable) and names of co-director(s).
- Major Accomplishments - Current year project portfolio, scientific and technological developments, patents, reports, events, and significant technology transferred to members and its impact on the company, the industry, and the nation. (This should be written for the public).
- Communications and Decision Making
 - How does the center interact and communicate with center members?
 - How are the research programs planned and selected?
 - Confirm annual update of the I/UCRC Directory at <http://www.nsf.gov/eng/iip/iucrc>.
- Membership Identification: Current members, members at the start of the award, new members added, and members who left the center.
- Annual Membership Fees: primary, secondary, and tertiary.

Evaluator's Report

Evaluators are expected to produce an annual report that incorporates information obtained via participant observation, surveys of faculty and industry, and exit interviews. Additional information about the evaluator's role, responsibility and data gathering instruments can be found at www.ncsu.edu/iucrc/. The format of the report is as follows:

- Overview: Provide a general overview of the center's status.
- Goals and objectives: Describe the center's primary technical and organizational goals and objectives.
- Environmental and Institutional: Describe any environmental (e.g., decline in industry's competitive position) or institutional or university (e.g., partnerships with other universities, shift in university priorities) changes.
- Organizational: Describe any changes in the center's personnel, structure, policies, financial status, etc.
- Research Program: Describe any changes in the center's research program.
- Center accomplishments: Describe any accomplishments or impact the center has had in the following areas: knowledge/technical advances; technology transfer; educational impacts.
- Analysis: Based on the information provided above and other relevant information, comment on the health and vitality of the center.
- Timeline: Attach an updated timeline of significant events and milestones, which have occurred over the center's lifetime.

Certification of Membership

The certification is a letter or document from the **University Sponsored Research Office (SRO)** familiar with the center that affirms the execution of membership agreements and details the receipts of annual cash and in-kind membership fees or commitments from members.

Center Structural Data Reporting

In addition to the annual report, centers are required to provide data to NSF and its authorized representatives (contractors or grantees.) These data are used for NSF internal reports, to look at historical trend, and for securing future funding for continued I/UCRC program maintenance and growth. Data that a given center provides as well as aggregate data across all centers is available to that center as a management tool. Updates by centers to their structural data in the I/UCRC database are required annually. Data for the *last complete fiscal year* should be submitted via the mechanisms provided by NSF or its contractors no later than September 30. Centers are responsible for submitting this information after the award expires for their final fiscal year of activity. These indicators are both quantitative and descriptive.

- Quantitative information from the most recently completed fiscal year such as:
 - Number and diversity of students, faculty, and industrial members involved in the center;
 - Degrees granted to students involved in center activities;
 - Amounts and sources of income to the center; and
 - Lists of patents, licenses, and publications created.
- Operating Budget and Total Funding
 - Total funding;
 - NSF I/UCRC funding received;
 - Other NSF funding received; and
 - Additional support broken down by Industry, State, University, Other Federal, Non-federal, and other support.
- Capital and In-Kind support
 - Equipment,
 - Facilities,
 - Personnel,
 - Software, and
 - Other support
- Human Resources
 - Researchers (number of faculty scientists and engineers, number of non-faculty scientists and engineers);
 - Students (number of graduate, number undergraduate);
 - Administration, number of full and part time professional and clerical staff; and
 - Information about broadening participation on the above with plans to increase broadening participation, if necessary
- Center Director Descriptors
 - Position and rank of the Director;
 - Status of tenure;
 - Name and position of the person to whom the Center Director reports; and
 - Estimate of the percent of time the director devotes to center administration, other administration, research, teaching, other.

- Center Outcomes
 - Students receiving degrees and type of degree earned;
 - Students hired by industry by type of degree; and
 - Publications
 - number with center research;
 - number with IAB members; and
 - number of presentations
- Intellectual Property Events
 - Invention disclosures;
 - Patent applications;
 - Software copyrights;
 - Patents granted and derived or both;
 - Licensing agreements; and
 - Royalties realized

I/UCRC Directory Reporting

I/UCRCs are required to provide accurate and up-to-date information that NSF can use for the online I/UCRC directory at <http://www.nsf.gov/eng/iip/iucrc/directory/index.jsp>. Instructions for updating and reporting web site information can be found at <http://www.nsf.gov/eng/iip/iucrc/directory/instructions.jsp>.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Larry Hornak, Lead I/UCRC Program Director, Directorate for Engineering, telephone: (703) 292-2678, fax: (703) 292-9057, email: lhornak@nsf.gov
- Shashank Priya, Program Director, Directorate for Engineering, telephone: (703)292-4709, fax: (703)292-9057, email: spriya@nsf.gov
- Rita Rodriguez, Program Director, Directorate for Computer & Information Science & Engineering, 1175 N, telephone: (703) 292-8950, fax: (703) 292-9010, email: rrodrigu@nsf.gov
- Raffaella Montelli, Program Director, Directorate for Geosciences, 785S, telephone: (703)292-4361, fax: (703)292-9023, email: rmontell@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF [Grants Conferences](#). Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on NSF's website at https://public.govdelivery.com/accounts/USNSF/subscriber/new?topic_id=USNSF_179.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at <http://www.grants.gov>.

Related Programs:

Sources for additional information:

- Visit <http://www.nsf.gov/eng/iip/iucrc/> for information on unsolicited proposal submissions, interagency transfers, tie-projects, MIPRs, and other general information about the I/UCRC program.
- The Typical Agreement for I/UCRCs can be found at http://www.nsf.gov/eng/iip/iucrc/sample_agreement_form.jsp
- The Directory of I/UCRCs can be found at <http://www.nsf.gov/eng/iip/iucrc/directory/index.jsp>
- Programs in which I/UCRCs may participate can be found at <http://www.nsf.gov/div/index.jsp?div=IIP>

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
 - Send an e-mail to: nsfpubs@nsf.gov
 - or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, [NSF-50](#), "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and [NSF-51](#), "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Office of the General Counsel
National Science Foundation
Arlington, VA 22230

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